

IN THE CIRCUIT COURT OF THE COUNTY OF ST. LOUIS
STATE OF MISSOURI
Division No. 4
The Honorable Bernhardt C. Drumm, Jr., Judge

CLAYTON CENTER ASSOCIATES,)
ET. AL.,)
Plaintiffs,)
v.) Cause No. 581479
W.R. GRACE & CO.-CONN.,)
Defendants.)

DAILY TRANSCRIPT
OF TRIAL

TUESDAY, FEBRUARY 18, 1992

(Volume V)

Testimony of:

William A. Longo, PhD

&

Mr. Ronald V. Gobbell

Linda Tockman, CCR, CM
Rebecca Dickler, CCR, CM
Official Court Reporters
21st Judicial Circuit

1 Q When did you do that work?

2 A Approximately 1988.

3 Q Dr. Longo, have you done any analysis of dust
4 samples that were taken in the Chromalloy building?

5 A Yes, sir, we have.

6 Q How many groups or sets of analyses have you
7 done?

8 A Four groups or sets.

9 Q When was the first, when was the first such
10 grouping?

11 A It was in October of 1989.

12 Q How many samples did you look at?

13 A In that particular grouping we looked at,
14 just hold on for a second. We looked at eight samples.

15 Q From how many different floors?

16 A They came from seven different floors.

17 Q Did you find a sample that had no asbestos in
18 it?

19 A Yes, sir, we did.

20 Q Was that taken above or below the ceiling
21 tile?

22 A I understand it's below the ceiling.

23 Q Of those samples that you found
24 asbestos-containing materials in, what was the average
25 asbestos structure count per square foot?

1 A The average concentration was 538 Million 97:
2 Thousand asbestos structures per square foot.

3 Q And what was the range of structures where
4 you found asbestos?

5 A The highest one was One Billion,
6 348 Thousand -- excuse me, One Billion, 348 Million
7 asbestos structures per square foot. The lowest one was
8 35 Million 190 Thousand asbestos-containing structures
9 per square foot.

10 Q Dr. Longo, so we know what structures are and
11 how you do this analysis, did you take some photographs
12 of the dust?

13 A Yes, sir, we did.

14 Q Did you take some photographs of a bulk
15 sample that was taken?

16 A Yes, sir. Yes, sir, we did.

17 Q And have you prepared those photographs on
18 two charts?

19 A Yes, I have.

20 Q Is that what these are?

21 A Yes.

22 MR. RUNYAN: Your Honor, at this time I would
23 like to ask the witness to come down in front of the jury
24 so I might ask him some questions about these two.

25 THE COURT: Okay.

1 A (The witness complied.)

2 Q (By Mr. Runyan) First of all, Dr. Longo,
3 would you please stand right there, please, sir?

4 A (By the Witness) Sure.

5 Q Tell the jury what these photographs are of.

6 A This is from bulk samples that were taken
7 from the Chromalloy building. These are bulk samples of
8 the W.R. Grace Monokote that's in here. This shows the
9 various ingredients that are in the bulk sample.

10 The first, we have chrysotile asbestos.

11 That's these long fiber structures you see in this
12 photograph.

13 Q Let me stop you right there. Are these taken
14 with an electron microscope?

15 A Yes, sir, they were.

16 Q Go ahead.

17 A These were placed onto a filter. You notice,
18 you will see the little holes. That's actually the
19 filter material that collected these fibers.

20 The second component that's in the asbestos
21 products is another type of asbestos fiber called
22 tremolite. That's shown by this long structure here.

23 The third ingredient that we typically find
24 in these samples is known as vermiculite. This is a
25 vermiculite plate. Again you see all these chrysotile

1 fiber structures.

2 The last component is known as gypsum. You
3 can see again this type of telltale sign of what gypsum
4 looks like. Again we have some vermiculite and
5 chrysotile.

6 Q Dr. Longo, are these elements that you have
7 written here constituents of the product known as
8 Monokote, the asbestos-containing version?

9 A Yes, it is.

10 Q Did you take these photographs of a sample
11 material that came from this building?

12 A Yes, I did.

13 Q In your opinion what product is that?

14 A That is W.R. Grace Monokote-3.

15 Q And can you tell the jury about the length of
16 some of these fibers that you see here?

17 A Well, we have a wide range of sizes. These
18 holes, for reference, are approximately .2 microns in
19 size. So we have fibers as small as 1 micron, and you
20 can see some fibers that were very long, greater than
21 5 microns. You have a whole size distribution of fibers
22 in this material.

23 Q Hang on just a second. Now, what are these
24 photographs of?

25 A These are photographs of the various types of

1 structures we found in the dust samples.

2 Q All right. What is this a picture of?

3 A Again we have chrysotile. Here is a
4 chrysotile structure. This is what is known as a bundle.
5 If you look closely you can see this structure consists
6 of at least 5 to 10 fibers, but as an electron
7 microscopist we are only allowed to count that as one
8 structure, just as we count 1 fiber as one structure.
9 But you can see it has multi-fibers in that structure.

10 The second thing we found, again, is another
11 tremolite fiber. We also found these vermiculite plates.
12 You remember in the last photograph the vermiculite
13 plates are one of the ingredients of the Monokote. Here
14 is another one. This has multi-asbestos fibers
15 associated with it. Again, as an electron microscopist
16 we can only count that as one material.

17 The last thing we found is some gypsum in the
18 dust, as well as vermiculite and chrysotile.

19 Q Dr. Longo, based upon your analysis of the
20 bulk sample, and based upon your analysis of the dust
21 sample, do you have an opinion where these constituents
22 in the dust from the back of the ceiling tile in the
23 Chromalloy building came from?

24 A Yes, I do.

25 Q Where did it come from?

From the fireproofir in the building.

Q Did you find the same ingredients in the dust
that you found in the sample itself?

A Yes, I did.

Q Do you have an opinion about where the vermiculite was mined?

A I believe it was mined at the Libby mines in
Montana.

Why is that your opinion?

10 A We did some additional analysis for these
11 materials and found a very high concentration of
12 tremolite in with the vermiculite. That's one of the
13 contaminants associated with vermiculite out of that
14 mine.

15 Q Thank you, sir. You can take your seat
16 again.

17 Doctor, I may have gotten a little bit head
18 of myself. Will you just tell the jury what a dust
19 sample is?

20 A It's quite literally sampling that you've all
21 seen, regular dust that accumulates on a surface over
22 time. We literally sample that dust and analyze it to
23 see how much if any asbestos is in it.

24 Q Let's go back now to the dust samples,
25 grouping of dust samples you said you got. We talked

1 about the group in October of 89. Did you analyze any
2 others after that?

3 A Yes, sir, the next set of samples came in
4 around April 18th of 1991.

5 Q And how many samples were in that set?

6 A There were four samples.

7 Q Can you tell the jury how many floors were
8 represented in those samples?

9 A Four different floors.

10 Q What was the average concentration in
11 structures per square foot?

12 A The average concentration for these samples
13 was 11 Billion 860 Million 750 Thousand asbestos
14 structures per square foot.

15 Q Can you tell the jury the range in
16 concentration among those four samples?

17 A The highest one was 39 Billion 960 Million
18 asbestos structures per square foot. The lowest one was
19 143 Million 400 Thousand asbestos structures per square
20 foot.

21 Q Did you subsequently receive any other dust
22 samples that you analyzed from this building?

23 A The next set of dust samples we received on
24 April 29th of 1991.

25 Q And how many samples were in that set?

1 A There were five samples.

2 Q And from how many different floors?

3 A Five different floorings.

4 Q What was the average concentration in
5 structures per square foot for those samples?

6 A The average concentration was 2 Billion
7 419 Million asbestos structures per square foot.

8 Q And what was the range in concentration for
9 those five samples?

10 A The highest one found on the 8th floor was
11 6 Billion 102 Million asbestos structures per square
12 foot.

13 Q What was the lowest?

14 A The lowest was 118 Million asbestos
15 structures per square foot.

16 Q Finally, Dr. Longo, did you analyze another
17 set of dust samples from this building?

18 A Yes, sir, the last, the next set came in on
19 July 21st of 1991.

20 Q How many floors were represented in that?

21 A In this particular set, four different
22 floors.

23 Q How many samples did you have?

24 A Four.

25 Q What was the average concentration?

1 A The average concentration was 816 Million
2 333 Thousand 330 asbestos structures per square foot.

3 Q Can you tell the jury the range in
4 concentration for these four samples?

5 A The highest one, which was found on the 18th
6 floor on top of a ceiling tile, was 2 Billion 222 Million
7 asbestos structures per square foot. The lowest was
8 103 Million 900 Thousand asbestos structures per square
9 foot.

10 Q Doctor, have you computed an average
11 concentration in structures per square foot for all of
12 these samples?

13 A Yes, I have.

14 Q What is that?

15 A It's approximately 3 Billion 900 Million
16 asbestos structures per square foot.

17 Q Now, let me ask you a couple of things about
18 the procedure that you go through in analyzing and
19 preparing one of these samples. Do you ever dilute a
20 sample?

21 A Yes, sir.

22 Q Why do you do that?

23 A Well, most of the times if there is asbestos
24 present the asbestos concentration may be much too
25 concentrated for us to analyze it in the electron

1 microscope. In that case we have to dilute the sample so
2 we can get it down to a number of asbestos structures
3 that we can actually count in the microscope.

4 Q Have you brought with you a slide showing a
5 heavily-loaded sample?

6 A Yes, sir.

7 Q Can you see that, Dr. Longo?

8 A Yes, sir, I can.

9 Q What does that show?

10 A That is an actual photograph of the
11 electron -- in the electron microscope of one of the dust
12 samples in this project. And what it shows, and this is
13 one small area that we are looking at. What it shows is
14 there is literally asbestos structures everywhere. And
15 there are so many of them we can't count them.

16 Q So when you have a situation like this, what
17 do you do so you can count them?

18 A We then dilute the sample, that is, put less
19 structures in a bigger volume so then we can count the
20 sample.

21 Q Physically how do you do that?

22 A We take the solution that the asbestos is in
23 and we take a small component out of it and dilute it
24 into a bigger volume so that you have less fibers now, or
25 less structures in a larger volume. We then filter that.